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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,447	12/13/2000	Guy Richard Chandler	JMYT-223US	4878
23122	7590	10/03/2003	EXAMINER	
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P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			3748	

DATE MAILED: 10/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/623,447

Applicant(s)

CHANDLER ET AL.

Examiner

Diem Tran

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,7-9 and 11-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,4,5,7-9 and 11-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 1, 4, 5, 7, 9, 11-16, 19-22, 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murachi (US patent 5,746,989) in view of Bogart et al. (US Patent 4,923,487).***

Regarding claims 1, 9, 11, 21, 25, 27, Murachi discloses an emission control exhaust gas aftertreatment apparatus for exhaust gases from diesel engines, comprising a source of NO<sub>2</sub> (5), a wall flow filter (7) (see Figure 1, col. 4, lines 29-42), particulates are collected on the filter and combusted in the presence of said NO<sub>2</sub> in said filter (see col. 5, lines 43+); however, fails to disclose directing flow of gases to a central portion of the filter and an exhaust gas by-pass effective under all operating conditions. Bogart teaches that it is conventional in the art, to direct flow of gases to a central portion of the filter, and use an exhaust gas by-pass effective under all operating conditions wherein a portion of the exhaust gases do not pass the trap. See the relative cross-sections in Figure 5, clearly the ratio of the cross-sections shown would collect up to 85 wt. % of engine-out particulate matters.

It would have been obvious to one having ordinary skill in the art at the time the

invention was made, to have utilized the teaching taught by Bogart in the Murachi method since the use thereof would have alleviated the increasing back pressure when the particulate trap becomes substantially blocked.

Regarding claims 4, 12, Murachi further discloses the source of NO<sub>2</sub> is a catalyst which is effective to convert at least a portion of the NO in the exhaust gases to NO<sub>2</sub> (see col. 5, lines 40-47).

Regarding claim 5, Murachi further discloses the exhaust gases pass through the catalyst before passing through the trap (see Figure 1).

Regarding claims 7, 13, Murachi further discloses that said apparatus in combination with NO<sub>x</sub> control means being an NO<sub>x</sub> absorbent (9) (see col. 4, lines 59-63; col. 11, lines 4-6).

Regarding claim 14, the modified Murachi apparatus further discloses that the trap comprises a wall flow filter and the peripheral regions thereof comprise the bypass.

Regarding claim 15, Murachi further discloses that a catalyst carried by the trap (see col. 4, lines 44-49).

Regarding claims 16, 19, 20, 22, 26, 28, based on the ratio of the cross-sections of the area shown in Figure 5, it appears that the Bogart filter would be effective to trap about 50 wt. % or more of engine-out particulates.

***Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murachi et al. (US patent 5,746,989) in view of Bogart et al. (US Patent 4,923,487) as applied to claim 13 above, and further in view of Tanaka et al. (US Patent 5,551,231).***

Regarding claim 8, the modified Murachi apparatus discloses all the claimed limitations as discussed in claim 13 above; however, fails to specifically state that the NOx absorbent releases NOx when the temperature exceeds about 250°C. Tanaka teaches that NOx absorbed in the trap are routinely released about 200°C (see col. 6, lines 51-53, 57-60, 66-67, col. 7, lines 1-11). It would have been obvious to one having ordinary skill in the art, to have claimed such a temperature, since this adsorb/desorb cycle is a characteristic of virtually all NOx adsorbents.

***Claims 17, 18, 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murachi et al. (US patent 5,746,989) and Bogart et al. (US Patent 4,923,487) as applied to claims 1, 21 above, and further in view of Buck (US Patent 5,571,298).***

Regarding claims 17, 18, 23, 24, the modified Murachi device discloses all the claimed limitations as discussed in claims 1, 21 above, however, fails to disclose that the filter comprises woven wire mesh or knitted wire mesh. Buck teaches that it is conventional in the art, to utilize a filter comprising woven wire mesh or knitted wire mesh (see col. 1, lines 30-40).

It would have been obvious to one having ordinary skill in the art, to have utilized a filter comprising woven wire mesh or knitted wire mesh as taught by Buck in the modified Murachi apparatus, since the use thereof would have improved the efficiency for the particulate filter.

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**Conclusion**

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (703) 308-6073. The examiner can normally be reached on Monday -Friday from 8:00 a.m.-5:30p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

DT

September 24, 2003



Diem Tran  
Patent Examiner  
Art unit 3748



THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700